

Research Document

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JACKSON SINCLAIR

Winsport Team Lead,
Performance Training Centre

What are some barriers that stop young adults from getting exercise?

"I think an answer that you're going to get from a lot of people is cost, it's a really big barrier. An answer that might not be as common is community. When you leave high school and you're in a new university or new gym, it's really intimidating. When you go to a facility, sport or group that you don't know people in, it can be very hard to put yourself out there and I feel that restricts a lot of people. The thing is, once you're there and the community is right for you, then you're there for a long period of time. That's what we try to build at Winsport, is community. Every gym has equipment and coaches, but it's the people there that you're going to want to pay that cost, spend time there and feel comfortable or vulnerable (you're not looking your best, you're sweating and you're not looking "Instagram ready" because you're putting in work). I think another barrier is knowledge of what people can do. Everyone thinks physical activity is going to the gym, but it's more than that, it's gardening, hiking, golfing, etc. I think it's the lack of knowledge of what you can actually do in the city."

Do you know a way we can motivate people to get exercise?

"I am not a big supporter of holding the general population's hand and to help them get things done. They need to figure out what motivates them and then find out how to achieve it. Is it body image,



competitive, social? What motivates you to get out of your house? If it's social, then join a club. People just need to be able to know where to look. There is no central website or app in Calgary that tells you all the things (physical activity related) going on in the city. Working in the industry, we don't know what other recreation centres in Calgary are doing. It's not about competition, there's a lot of opportunities to help each other and grow our businesses to help Calgarians. That's something Calgary doesn't do is brag about itself, I think they need to switch that and brag about the cool stuff that happens everyday! We don't need to build anything, we already have that. How do we let people know what's going on?"

Why is physical activity important?

“For me personally, it is mental health. When you leave school you learn that the workforce is really hard and it’s busy. Exercising is a way to clear your mind and feel better, whether it’s your physical appearance or just moving in general. Physical activity lets people get away from the stresses of everyday life and gets you in an energized bubble, and honestly it helps you stay alive longer.”

How can we encourage more young adults to get involved in physical activity?

“That’s a tough one, I don’t really know the answer to this question. I think some creative ways to use what young adults are on is social media. Challenging the general population doesn’t make people feel like their being called out, it’s when their name is seen is when they will make the move. So if I say ‘Johanna, get more active, you’re going to be like shoot, I got to get more active!’ But if I say ‘I challenge young adults 18-24 to get more active,’ they’re going to be like nope next. Incentives are usually good too. Is there a reward program for how many steps you get or for joining a club, etc.”

Do you see an influx in popularity of certain sports due to social media?

“I think there is an influx in working out. The Instagram fitness model is a realistic competitor to me running a facility. Anyone who is fit and has more than 5000 followers or has a voice will make people listen and follow them and want to be like them (or “use my fitness code to get a 10% discount at this gym or for this cool equipment”). I think the Calgary Sport and Social Club (CSSC) is something that is cool too, but it’s focuses more on an older demographic (25-35 population).”

What is the predominant demographic you see throughout different sessions?

“Everyone is going to their university or work, so for them to spend money and come to a gym (unless their parents are paying for it) we won’t see them until summer. We had a lot of summer students/instructors this year and it was pretty equal with females and males. Most of them are already pretty active, we didn’t get any first timers, which is unfortunate. Because we are called a performance training centre it’s pretty intimidating coming here than going to a recreation centre or world health centre. Around the facility you see older guys or dads playing hockey on the rinks, you see teenagers on the ski hill or you see young students at the National Sport School, not university students that often.”

Does the weather in Calgary play a role in the amount of participation?

“I don’t know why we live here, it’s unfortunate we get limited access to outside. I think we are one of the coolest cities in the summertime because once it’s nice out everyone is outside (river, parks, mountains) and they know it’s going to disappear in two months. In the winter, we are all going to the mountains and it’s pretty rare to find someone who doesn’t ski or snowboard or go to Sunshine.”

Do you know of any programs within Calgary that target mainly young adults?

“We have programs like *Discover Boxing* and *Discover Weightlifting* mainly targeting 16-30 year olds. We mostly see 25-30 year olds coming in. It’s the cost piece again, kids your age has money, but they choose not to spend it on physical activity like this. Other programs around here is more employment than activity.”

MARTY CLARK

MRU Assistant Professor,
Health and Physical Education

Why is physical activity important?

"There are a lot of reasons and a direct connection between physical activity and health. You want people to be as physically active as they can to make sure their bodies are sort of remaining healthy. Physical activity and burning calories will keep your body in that healthy spot. There are also mental health benefits. Oftentimes physical activity is done with other people, so there are social benefits. It is fun and when we are having fun, we are happier and healthier."

How can we encourage more young adults to get involved in physical activity?

"There are things that draw the attention of young people away from physical activity (social media, video games, Netflix, etc.) that are very passive and inactive. So, maybe think of ways to combine those. How can you combine people's love of social media and video games with physical activity? For example, *Pokemon Go*. I was amazed at how many people who would be gaming at home sitting on a couch were actually out and about getting exercise in that moment. Another thing is to try and think how we could reduce all those barriers we just talked about. Maybe someone really wants to be physically active, but maybe doesn't have the money to join a team or buy the equipment for a sport. Think of ways you could reduce the cost of participation, like working with governments to offer cheap

alternatives for people who are facing barriers. So, studying what those barriers are and how they work and trying to alleviate them. I think that is a really good start, really supporting charities in the area. Supporting charities like *Jump Start*, not to just leave it all up to them and say corporate charities be the saviours here. I can't think of anything else off the top of my head, but yeah it is going to be a challenge."

What are some barriers that stop young adults from getting exercise?

"We like to think that physical activity is free and that everyone can do it, but there are costs associated with it in 2019. To be physically active in an urban environment like Calgary, oftentimes means joining a gym. Gym memberships cost money and if you are lucky enough to be a MRU student you get that membership, but you have to pay tuition. There are money barriers for sure, especially to any sort of organized physical activity. If you want to join a team or go to a facility, like a gym, the Repsol Centre, etc. Another barrier for young people is access, like geography. Do you live close to spaces that you feel comfortable being physically active? If you live in a neighbourhood that doesn't have a cheap gym or a cheap option for a gym close by, then that's hard. Is there a cheap option close to where you live. There are also barriers tougher to see, maybe you are embarrassed about the way you look while you are being physically active and so you don't have a space to be physically active that you feel comfortable in. Do you speak the language? For new Canadians a big barrier would be the comfort and if they understand the language. Is there a community association that can help them get into some physical activity spaces? There are many barriers along the lines of gender. Are there women-only gyms, so women can feel comfortable? Depending on where you are, how much money you have and how comfortable you are with our culture, there can be various barriers and some of them we cannot see."

How much do you think family life is correlated to involvement in physical activity later in life?

“There is no doubt that family life and the influence your family has on you has an enormous impact on you and what you do. I think about my co-worker Ian Sherington, who teaches in the Eco and Outdoor Tourism Leadership department, his kids are very active just like him and his wife. They learned that and got comfortable doing certain activities, gaining that knowledge from their families. Now they have the confidence to get physical activity, either with their family or on their own. Your family has a huge impact on you, just educationally. What do you learn what to do? What patterns of behaviour do you learn? If it’s eating a big meal and sitting the rest of the night, you are probably going to model that behaviour. The apple doesn’t fall far from the tree. It’s really tough to get out of patterns of behaviour that you yourself learn. I think someone has to try really hard to break out of those patterns and behaviours. Who your family is and what your cultural traditions are, are massive impacts.”

What is the predominant demographic you see throughout different sessions?

“You are going to see a certain age group playing certain sports like basketball and hockey. You aren’t going to see seniors playing those organized sports. You will maybe see some people that are 65, but mostly in their 50s still doing those sports. You could use MRU gym as an example, the demographic playing here is going to be mostly the 18-24 year old age group. They are also the people I think that haven’t experienced a lot of injuries and aren’t aging. At a place like MRU or even the YMCA that is the age bracket that is taking part in these sort of things. There are far more sport organizations here in Calgary for kids. All this infrastructure



for kids and not a lot of infrastructure for young adults. Once you become an adult, all those kids sports, organizations, planning done by parents, evaporates and disappears. You have to go out on your own and that depends on sporting leagues like Calgary Sport and Social Club (CSSC). Senior communities have physical activity, they plan it out and it’s a particular activity. Doing chair yoga or other activities like that. It just depends what infrastructure is available for people.”

Do you see an influx in popularity of certain sports due to social media?

“With social media, individual athlete’s fame has really gone up. For example, basketball players are hooked into other things that are popular (hip-hop culture) and that popularity is really growing through their social media. They also brand themselves. So, does the sport of basketball become more popular? I think in general yes. The NBA’s popularity is growing alongside the popularity of some stars like Lebron James and Kevin Durant. Also, fringe sports that wouldn’t typically be in mainstream media gain popularity through social media. You can start an instagram account for any sport that you have just started and if people think it’s cool, you will get your numbers and gain traction. I think social media can cover anything and if there is any sort of interest from anyone, it can build because it doesn’t have to go through that traditional media in order to gain popularity. There are lots of fringe sports, alternative sports and athletes who have gained popularity. Fringe sports, I think of some of the sports that have sort have become popular in the last 20-30 years that aren’t traditional sports. High risk sports you see in the X-Games. Or, some sort of surfing or a version of surfing that you haven’t seen before. Something could be fringe to us, like cricket, but massive in India. We might see cricket then through social media, if we are friends with individuals that play it.”

Does the weather in Calgary play a role in the amount of participation?

“In Canada, we have weather that is dramatic on both ends and we experience winter, summer and everything in between. We need winter and summer infrastructure. For example, places along the equator need just one infrastructural set. We need to have more, outdoor hockey rinks, ski hills, trails for skiing/snowshoeing. However, that is only

for a limited time. We also have to put money into golf courses, hiking trails (and the maintenance of them), biking paths, etc. That is expensive and limits our ability to produce an infrastructure for sport and physical activity when we are trying to do both. Repsol has to be heated in the winter, which is a huge cost. Weather limits that, you have to be paying for all these things. Day-to-day in Calgary, we don’t know what our weather is going to be. If you have winter activities planned and there is a chinook, your plans are ruined. However, people move here for physical activity reasons because of the proximity to the mountains. Lots of outdoor adventures. They like the weather and adapt to it, but there is no question that weather is limiting.”

Is there a widespread notion that people think physical activity is seen as work?

“That’s an interesting question. I make jokes about going to the gym all the time, like I haven’t been to the gym in a week and it’s because I am lazy. Laziness as the opposite of working. I think there is a widespread notion that when you go to the gym you need to sweat and work. Every individual has their own sort of relationship to that. There are people who like to sweat and see it as super beneficial and it’s not work to them. It’s fun, they want to feel the burn. To them that is progress and success. If people didn’t think it was work we would have to have way more gyms and they would be packed. There is something going on there where people associate it with work and labour. I went to a talk one time about physical activity and nurses. The people that did the study were trying to get the nurses to be more physically active and get them on treadmills. I was banging my head against the wall because nurses walk all day. They get that kind of physical activity and they have to wear special shoes to make sure their feet are comfortable. They are on their feet non-stop. The type of physical activity they were being asked to do was walking and it was being interpreted as more work. That didn’t make sense. If you are concerned about their physical activity, you have to be creative. Swimming, biking, something fun.”

ERICA ROBERTS

Healthy Campus Team Lead,
Mount Royal University

Why is physical activity important?

“There is a lot of information about this online! Check out resources like: <https://www.heart.org/en/healthy-living/fitness/fitness-basics/why-is-physical-activity-so-important-for-health-and-wellbeing>.”

What are some barriers that stop young adults from getting exercise?

“If you are looking at barriers from a university student’s perspective, lack of time would probably be the biggest barrier. Other students have mentioned their discomfort in accessing the fitness facility on account of the intimidation factor. Lack of knowledge around how to use the equipment and what exactly should go into a routine could also act as barriers”.

Is there a widespread notion that people think physical activity is seen as work?

“It depends on who you talk to. If you integrate it into your life as sport or recreation, this could be seen more as “fun” and engaging. But forcing yourself to go to the gym and lift weights when you aren’t super excited about it, could be seen as work. This is why it is important to find activities that you enjoy and look forward to participating in (whether it’s tennis, mountain biking or zumba) different strokes for different folks.”

Does the weather in Calgary play a role in the amount of participation?

“Anecdotally, we know that students are less willing to be outside in the winter months, as such it is more difficult to promote things like active transport or getting outside for a walk. We have worked with a faculty member who is interested on the impact of the outdoors on student well-being. She is currently working on a research proposal on an outdoor ambassador program whereby student volunteers will encourage their peers to get outside through the promotion of various activities. If you are interested in learning more, I’m sure that this faculty member would be happy to answer your questions. Her name is Dr. Shannon Kell in Health and Physical Education.”

How can we encourage more young adults to get involved in physical activity?

“More education on the benefits of physical activity. Providing more time for students to be active. Integrate physical activity into our daily practice (walking/biking to school, taking the stairs, building it into your routine). Intramurals and group fitness programs, which might also help to build community. Building intrinsic motivation around physical activity (i.e., improved mood and sleep) rather than focusing on extrinsic motivation (to impress others with your physical appearance) has been shown to build habits around physical activity, according to the research.”

ANONYMOUS SURVEY

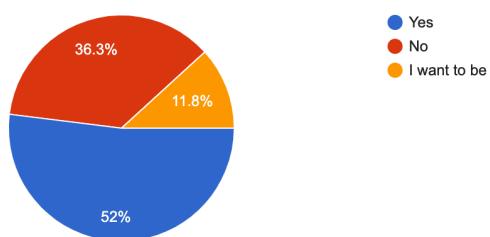
Physical Activity, Google Form

For our ethnographic research, we decided to carry out an anonymous survey about physical activity that we shared on our Instagram and Facebook profiles. As a result, we got a total of 102 responses! The biggest demographic was 20-22 year old females. We asked 10 questions that ranged from short answer to multiple choice. We had many interesting, helpful and even surprising answers. We found after the survey was finished that we could have given more follow up questions as to "why" the participants chose the answer they did. We also thought that we should've given less restrictions on questions and let people give their own written answer (instead of picking a multiple choice button). Overall, this anonymous survey helped us with our research and what other people perceive physical activity as.



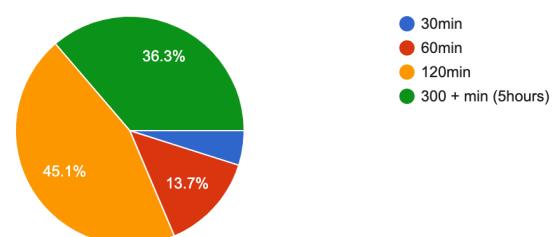
Are you involved in a sport club/organization/team?

102 responses



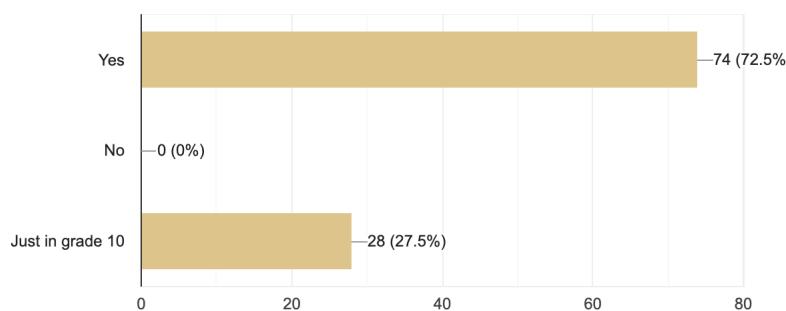
How much time do you spend exercising a week?

102 responses



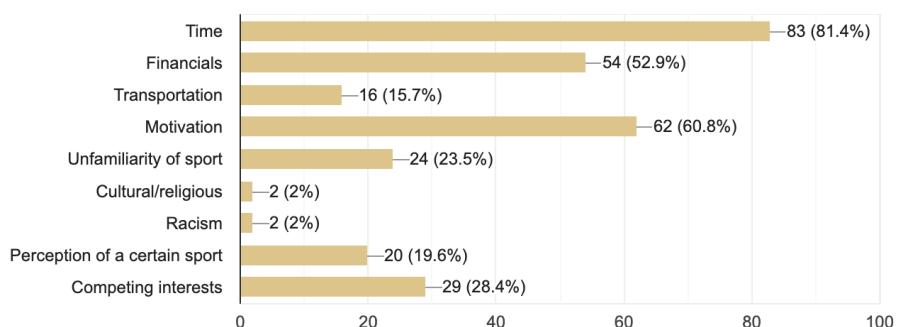
Did you take Physical Education in high school?

102 responses



Which of the following do you think has the greatest impact on young adults not participating in physical activity?

102 responses



How might we encourage more young adults to get involved in physical activity?

69 responses

Cheaper costs

Have some teams that are for beginners

Share opportunities that are convenient and easy to get to. Share how it promotes holistic wellbeing. Share how it promotes better sex. Share how it promotes organizational skills. Share how it promotes collaboration and raises self esteem. Everyone has a reason to determine why they do not work out more. It's important to encourage these folks to change their mind and put themselves out there. This is how they will truly learn how wonderful they are.

Social media

Better physical education systems in school and free/accessible options to get out and play/be active

Public funded gym/recreation centers

Make it more affordable and better education on its effect /benefits for future health and wellness

Free programs

Introduce different programs for cheap

Reduce costs and encourage equality

Make it easily accessible/fun

ANNOTATED BIBLIOGRAPHIES

Abedi, M. (2018) Canadians aren't nearly as active as they think they are: survey. *Global News*. Retrieved from https://globalnews.ca/news/4777241/canadians-physical-activity-survey/?utm_expid=kz0UD5JkQOCo6yMqxGqECg.0&utm_referrer=https%3A%2F%2Fglobalnews.ca%2Fnews%2F4777241%2Fcanadians-physical-activity-survey%2F

01 This article explains a survey StatCan researchers carried out to see if Canadians were getting enough physical activity by using accelerometers. The survey found that the measured amount of physical activity was far less than participants' own descriptions. On average, they claimed to get 49 minutes of activity per day, while the devices found they got 23 minutes. Experts say that if you want to make more healthy choices - both about physical activity and nutrition - it should begin with being more aware of choices.

Billion Dollar Question: Is Calgary the recreational capital of Canada? (n.d.). *Everyday Tourist*. Retrieved October from <http://everydaytourist.ca/2019/2019/1/13/billion-dollar-question-is-calgary-the-recreational-capital-of-canada>

02 This blog post provides helpful data on how much money has been put into the physical activity industry over the past three years. It also mentions the iconic recreation that Calgary has been building since the 80's, yet barriers still exist for individuals. The blog explores the definition of recreation. Despite Calgary's investment in recreation facilities and boasting about being physically active, this article brings to attention, "should we be building mega multi-million dollar regional multi-use recreation complexes, or should the focus be on local facilities and programs that foster everyday activities and socialization with one's immediate neighbours?"

Calgary Recreation ZBR. (n.d.). 42. Retrieved from <https://pub-calgary.escribemeetings.com/filestream.ashx?DocumentId=51007>

03 This report by the City of Calgary includes data on products/services, facilities, partnerships, and financials from 2016-2018. It includes the recreation business model, alignment and focus, strengths and challenges. The report concludes with the areas of focus for recreation facilities, area one being "lay a strategic foundation," area two being "translate purpose into action," and area three being "optimize direct delivery."

Centre for Active Living. Bike 2019. (n.d.). Retrieved from <https://www.centre4activeliving.ca/bike2019/>

04 Bike 2019 was a conference about engaging in conversation, research and practice about cycling as a mode of transportation, held in Edmonton and Calgary in the month of May. This website provides information about who spoke at the conference, a short summary of the conversation and a Youtube video of the conference. The video provides great insight on some of that statistics of cycling within Canada and Calgary. It goes into great depth of age and gender of cyclist, as well as the gender gap.

Centre for Active Learning. Recipe for a Cycling Environment. (2019). [pdf] *Centre for Active Living*. Retrieved from: https://www.centre4activeliving.ca/media/filer_public/dc/dd/dcddc65_2-ad6e-4263-b453-158873c78f35/bike-2019-summary.pdf

05 This article provides information on how to encourage and better understand individuals, while engaging them in cycling in their communities. Within the article there are several ideas that promote cycling, including encouragement programs (e.g. skills training, mentoring/buddy programs, group rides), Open Streets events, accessible and affordable bikeshare programs, and e-Bikes. It also has a step-by-step guide on how to build/provide an environment that supports cycling.

Dryden, J. (2019, September 17). 10,000 volunteers with fitness trackers could reshape Calgary planning. CBC News. Retrieved from <https://www.cbc.ca/news/canada/calgary/data-university-calgary-wearable-tech-project-1.5287757>

06 The city is looking to give a \$57,000 fund for a wearable technology project created at the University of Calgary. The plan to use data to improve planning and transportation in Calgary. U of C researchers want 10,000 volunteers to wear fitness trackers to collect a range of data, including heartbeat, blood pressure, steps, location, sleep, stress level and calories burned.

#GetMovingYYC. (2018). City of Calgary Recreation. Retrieved from <https://www.calgary.ca/CSPS/Recreation/Pages/getmoving.aspx?redirect=/getmoving>

07 #GetMovingYYC is an awareness-raising campaign aimed at getting Calgarians more active. The City of Calgary has over 50 recreation facilities, 22 fit parks, more than 8,000 hectares of parkland and natural areas, as well as 905 km of pathways with community maps. Swimming, walking, golfing, biking, skating, free activities and so much more are available.

Gosai, K., Carmichael, J., Carey, A., & Rand, E. (2018). Sport for Life for All Newcomers to Canada. *Sport for Life Society*. Retrieved from https://sportforlife.ca/wp-content/uploads//2018/01/Sport-for-Life-for-all-Newcomers-to-Canada_2018.pdf

08 This resource is developed for sport and physical activity organizations. It cites the barriers identified in ICC (2014) and highlights possible solutions, opportunities, and great examples of promising practices from organizations across the country that are making a concerted effort to engage and support newcomers in sport and physical activity.

Health. (2012). Encourage everyday exercise, not sporting elites. *NewScientist*. Retrieved from <https://www.newscientist.com/article/mg21528793-700-encourage-everyday-exercise-not-sporting-elites/>

09 This article explained how “keep-fit” enthusiasts hoped the examples set by champion athletes would encourage people to change their ways. London 2012 was to be the first Olympics to test this proposition: it promised that it would encourage 2 million people to become more active and persuade spectators to become participants. It goes on to say that this pledge failed because people don’t need role models to be active, they need guidance and time.

HealthLinkBC. (2016). Overcoming Barriers: Adding More Physical Activity to your Life. Retrieved from <https://www.healthlinkbc.ca/physical-activity/overcoming-barriers>

10 This article talks about different barriers that may stop someone from getting exercise. This includes no time, inconvenience, too expensive, no motivation, no support, or being discouraged. Everyone is different, with different abilities, knowledge, interests and free time. The key to success is setting a realistic fitness goal for you, choosing activities you like to do, and asking for the support of friends and professionals when you need it.

Healthy Living. (2018, May 31). A Common Vision for Increasing Physical Activity and Reducing Sedentary Living in Canada: Let’s Get Moving. Government of Canada. Retrieved from <https://www.canada.ca/en/public-health/services/publications/healthy-living/lets-get-moving.html>

11 Canada has never had a singular policy that focuses on physical activity and its relationship to sport, recreation, health and other relevant policy areas. The Common Vision, informed and inspired by Indigenous perspectives and input from many organization leaders, will guide the country towards ways of increasing physical activity and reducing sedentary living. The five principles include Physical Literacy, Life Course, Population Approach, Evidence-based and Emergent-focused and Motivations.

Health Seekers. (2018). How Much Physical Activity do You Need? Heart and Stroke Foundation. Retrieved from <https://www.heartandstroke.ca/get-healthy/stay-active/how-much-physical-activity-do-you-need>

12 This article gives recommendations for people starting physical activity for the first time, activities that range from light effort to vigorous effort, foods that are best for a specific diet, and the type of fitness tracker that is right for you. It also has many resources and related information about exercise, including a short video on “what is the single best thing we can do for our health.”

Intramural Sports. (2019). Mount Royal University Recreation. Retrieved from <https://mrucougars.com/sports/2019/7/16/intramural-sports.aspx>

13 Students, rec members and non-members can sign up for intramural sports every semester. It is a weekly sports league program where participants get the chance to try something new, make friends and play in a safe and fun environment. Participants can join as a team or Free Agent in a variety of leagues which are open to all skill levels. Sports range from volleyball and ice hockey to pickleball and wheelchair basketball.

Lemon, K. (2018). 21 Water Activities to Try in and Around Calgary. Narcity. Retrieved from <https://www.avenuecalgary.com/things-to-do/water-activities-to-try-in-and-around-calgary/>

14 As a land-locked city, it may appear that Calgary doesn't have much water on tap, but that couldn't be further from the truth. In the summer, Calgary has many water activities including stand-up paddle boarding yoga, kayaking, canoeing, sailing, river rafting, scuba diving, diving, fishing, swimming and even river surfing.

Life in Calgary. (n.a.). Sports and Outdoors. Retrieved from <https://www.lifeincalgary.ca/todo/sports-outdoors>

15 This webpage gives an overview of all the sporting activities, events and outdoor adventures you can do in Calgary. For example, there is golfing, sailing, rafting, swimming, kayaking, climbing, fishing, skiing and snowboarding available. Resources and links to related information can also be found on this page.

Macridis S., Johnston N., & Vallance J. (2017). 2017 Alberta Survey on Physical Activity. Alberta Centre for Active Living. Retrieved from https://www.centre4activeliving.ca/media/filer_public/32/98/3298ed62-b22d-47ae-bbc2-a8e711e7595f/2017-ab-survey-physical-activity.pdf

16 This article shows a list of barriers Canadians encounter with physical activity. The list categories by the percentages of Canadians that experience each barrier. As well as categorized by major, moderate, or minor, also environmental or individual. The list indicates lack of time the number one barrier at 69% and as an individual barrier. Lack of transportation as the lowest barrier at 17% and as an environmental factor. The article also covers the amount of exercise, the communities involved, income, education level, family composition, and employment status.

McCormack, G. R., Friedenreich, C., Shiell, A., Giles-Corti, B., & Doyle-Baker, P. K. (2010). Sex- and age-specific seasonal variations in physical activity among adults. *Journal of Epidemiology and Community Health* (1979-), 64(11), 1010–1016. Retrieved from JSTOR.

17 This article exams seasonal variations in self reported physical activity among the urban population of adult Calgarians. Data collected included walking for recreation, transportation, moderate, and vigorous PA within a week. Seasonal comparison was then conducted between the amount of PA and the weather. Where the findings of the research (2007-2008) concluded that physical activity participation was greater in the warmer seasons; Spring, Summer and Autumn. Where sufficient PA was achieved in warmer seasons. McCormacks conclusions found that creating physical activity environments that help overcome certain weather conditions/barriers might contribute to year-long physical activity participation.

Meetup. (n.a.). Sports and Fitness Groups in Calgary. Retrieved from <https://www.meetup.com/cities/ca/ab/calgary/sports-fitness/>

18 Meetup is a platform for finding and building local communities. There are a range of different sporting leagues people can join based on their skill and location. People can use Meetup to play sports, meet new people, learn new things, get out of their comfort zones, and pursue their passions, together.

Mitha H. (2016). Play City App. Retrieved from <https://www.playcityapp.com/download>

19 PlayCity is a free app (like Tinder for sports) that connects people with others who are interested in the same activities and sports, and who are at the same skill level. Meet new people, and stay active in Calgary.

Mustelin, L., Joutsi, J., Latvala, A., Pietiläinen, K. H., Rissanen, A. & Kaprio, J. (2012). Genetic Influences on Physical Activity in Young Adults. *Medicine & Science in Sports & Exercise*, 44(7), 1293–1301. doi: 10.1249/MSS.0b013e3182479747.

20

This study exams the different genetic and environmental factors on different aspects of physical activity in young adult twins. Different categories were sport, leisure, work and the total combined. The results found genetic factors contribute significantly to physical activity in young adults. Also that the sport activity has greater genetic influence than leisure and work.

Nose Creek Sport Physiotherapy. (2016, May 27). Retrieved from <https://www.nosecreekphysiotherapy.com>

21

This website provides some great information on the benefits, barriers, and obstacles that surround physical activity. There are also resources, such as blogs, pamphlets and workshops to help people ease their body pain and learn which physical activity is best for them.

Parks, Pathways and Natural areas. (2018). City of Calgary Recreation. Retrieved from <https://www.calgary.ca/CSPS/Parks/Pages/Locations/Parks-pathways-and-natural-areas.aspx>

22

Calgary maintains more than 1,100 playgrounds, over 475 soccer fields and over 430 baseball diamonds, mow the equivalent of nearly 3,800 McMahon stadiums during the growing season; public parks every two weeks and playfields once a week, and ensure the 8,400 park benches throughout the city are in good condition when you're ready for a sit-down. Calgarians can also fill out an annual satisfaction survey about the parks and natural areas. There are also the Devonian Gardens, Inglewood Bird Sanctuary, Olympic Plaza, Ralph Klein Park, Reader Rock Garden and Bottomlands Park.

ParticipACTION. (2019). Canadian Physical Activity Guidelines for Adults (18-64 years). *CSEP*. Retrieved from <https://csepguidelines.ca/adults-18-64/>

23

This guideline is relevant to all adults aged 18-64 years and encourages them to participate in a variety of physical activities that are enjoyable and safe. Adults can meet this guideline through planned exercise sessions, transportation, recreation, sports or occupational demands, in the context of family, work, volunteer and community activities. To achieve health benefits, adults should accumulate 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more. The text offers an excellent source for those learning about the health benefits of physical activity and the different types of exercise they can participate in.

Physical Activity Innovation Challenge. (2018). Creating New Ways to Get People Active. VicHealth. Retrieved from <https://www.vichealth.vic.gov.au/media-and-resources/blog/creating-new-ways-To-get-people-active>

24 Six sporting groups in Victoria, Australia have shared \$354,000 for VicHealth's Physical Activity Innovation Challenge, whose focus is on encouraging people to become active in ways that are more social, flexible and less-structured than traditional sport. The different initiatives include Pop-up Squash Shop, which transforms empty retail spaces into temporary squash courts; Stride Basketball, a low-impact form of walking basketball for women; Pumped for BMX, which uses under-utilised BMX tracks to get young people cycling; Bumpa Ball, a variation of water polo where players float in inflatable inner tubes; Active Families Playing Together, a recreation program for playgroups, and Pulseraiser, a mobile app that enables users to raise money for charity every time they go for a run.

Planning, T. (2014, July 16). Pedestrian Strategy. Retrieved from <https://www.calgary.ca/Transportation/TP/Pages/Planning/Calgary-Transportation-Plan/Pedestrian-Strategy.aspx>

25 Calgary's first pedestrian strategy (Step Forward) was approved in 2016 and includes 49 actions to help make Calgary safer, more comfortable and interesting for walking. This will help more Calgarians benefit from an active lifestyle and it will also support local communities' goals. The strategy hope that more people/children will walk to school, work, etc., fewer pedestrian injuries, better winter conditions for walking, more walkable communities and higher confidence in the system.

Recreational Activities—Fish Creek Provincial Park | Alberta Parks. (n.d.). Retrieved from <https://albertaparks.ca/parks/kananaskis/fish-creek-pp/activities-events/recreational-activities/>

26 Fish Creek Provincial Park is the second largest urban park in Canada and is located in Calgary. The park has many amenities like: biking, birding, boating, fishing, golfing, rollerblading, swimming, walking/hiking, wildlife watching, and winter activities.

SHAPE. (n.d.). Retrieved from <https://shapeab.com/>

27 Shape is an organization whose mission is to have every Albertan choose safe, healthy, active modes of transportation on a regular basis. They hold events and programs that encourage Alberta communities to have active transportation in their lives. Some events include, International Walk to School Day, Winter Walk Day and Wheel Week. Some programs include, Park and Walk, School Travel Planning, and Walking Buddies.

SIRC. (2016, February 24). Addressing Barriers to Physical Activity. Retrieved from <https://sirc.ca/blog/addressing-barriers-physical-activity>

28 This article explains the many barriers people face when participating in physical activity including gender, financial constraints, inclusive sports, culture and lack of facilities and resources. However, there are many positive opportunities to help overcome these barriers, thanks to the strength of the sport community in Canada.

Sports + Recreation - S2 Architecture. (n.d.). We Really do Think it's all Fun and Games. Retrieved from <http://www.s2architecture.com/sectors/sports-recreation.html>

29 S2 is an architecture firm that has built many of Calgary's recreation facilities. They understand that these facilities, in addition to being an amenity for sports and physical exercise, must provide opportunities for social interaction and cultural and community celebrations. Projects and concept design include Canyon Meadows Aquatic and Fitness Centre, Shouldice Park, Glenmore Athletic Park Master Plan and Edge School for Athletes.

Statistics Canada. (2019). Tracking Physical Activity Levels of Canadians, 2016 and 2017. Retrieved from <https://www150.statcan.gc.ca/n1/daily-quotidien/190417/dq190417g-eng.htm>

30 This survey shows that only 16% of adults meet the recommended target for physical activity. The recommendation for adults is a physical activity target of 150 minutes of MVPA per week, in sessions of 10 minutes or more. Compared with children and youth, adults are generally less likely to adhere to the guidelines set for physical activity.

Steinhilber, B. (2018). The health benefits of working out with a crowd. NBC News. Retrieved from <https://www.nbcnews.com/better/health/why-you-should-work-out-crowd-ncna798936>

31 Research shows that the healthy actions of others rub off on people. A study published in the Journal of Social Sciences found that participants gravitate towards the exercise behaviors of those around them. In addition, a 2016 study published in the journal Obesity found that overweight people tend to lose more weight if they spend time with their fit friends — the more time they spend together, the more weight they lose.

The Rotary Mattamy Greenway. (n.d.). *Parks Foundation Calgary*. Retrieved from <https://www.parksfdn.com/greenway>

32 A \$50M project that encompassed a pathway that encircles Calgary. Now forming the world's largest pathway network (1000KM), connecting 55 communities throughout Calgary. You can navigate the pathway by using the posts and signs or downloading Calgary's Pathways and Bikeways System.

The World Health Organization. (2008). Physical Inactivity: A Global Public Health Problem. Retrieved from https://www.who.int/dietphysicalactivity/factsheet_inactivity/en/

33 This article delves into the problems people face around the world when trying to get physically active. Globally, around 31% of adults aged 15 and over were insufficiently active in 2008 (men 28% and women 34%). Approximately 3.2 million deaths each year are attributable to insufficient physical activity. Environmental factors which may discourage participation in physical activity include violence, high-density traffic, low air quality, pollution, and lack of parks, sidewalks and sports/recreation facilities.

University of Pennsylvania Annenberg School for Communication. (2015). Social networks can motivate people to exercise more. Retrieved from <https://www.sciencedaily.com/releases/2015/10/151007110738.htm>

34 In this study, the influence of our social networks can be a powerful motivator to encourage more physical activity. It reveals that these same positive behavior signals are also powerful in our online networks, and can be harnessed for the social good. This approach could be applied not only to encourage exercise, but also to promote vaccinations, medication compliance, and preventative care.

UWALK. (n.d.). Retrieved from UWALK website: <https://uwalk.ca/>

35 With UWALK you can easily keep track of your physical activity by logging it as minutes or number of steps. Over 74% of Albertans do some sort of walking for about an hour per week. You can connect with your family and friends, track your physical activity online, see your progress and challenge yourself or a team.

